Book reviews

Flora Malesiana. Series II — Ferns and Fern allies, Volume 3

C. Kalkman and H.P. Nooteboom (eds.).

Rijksherbarium/Hortus Botanicus, Leiden, The Netherlands, under the auspices of Foundation Flora Malesiana. 1998. vi + 334 pages, including 35 line drawings, of which 19 are full-page. Paperbound with a full-colour cover. Price: Dfl. 100.00. ISBN 90-71236-39-0.

This volume covers seven families of ferns and fern allies for Malesia, a region covering the countries Indonesia, Malaysia, Brunei Darussalam, Singapore, the Philippines, and Papua New Guinea. No classification system is followed in the arrangement of the families. The first family, **Polypodiaceae**, pp. 1–234 is dealt with by P.H. Hovenkamp (with contributions by M.T.M. Bosman, E. Hennipman, H.P. Nooteboom, G. Rödl-Linder, and M.C. Roos), all of who are well known for their excellent monographs on several genera in this family. In Malesia the family is represented by 18 genera and 183 species. Keys to the genera and the species are provided and in the larger genera i.e. *Microsorum* and *Selliguea* regional keys are presented. *Loxogramma*, a genus generally included in the Polypodiaceae is here considered as belonging to the family Loxogrammaceae. The family **Davalliaceae**, pp. 235–276 is dealt with by H.P. Nooteboom. Three genera belonging to this family occur in Malesia of which *Davallia* with 23 species is the largest. A key to the genera and to the species for each genus is provided. For *Davallia* 31 SEM photographs arranged in four plates illustrating the sori are given. The small nearly cosmopolitan family of aquatic ferns, the **Azollaceae**, pp. 277–284, by R.M.K. Saunders is represented in Malesia by a single species. Notes on reproduction, fossils, phylogeny, vegetative and reproductive structures and life cycle, chromosomes, uses and taxonomy are presented in the general part of the treatment. The monotypic family **Cheiropleuriaceae**, pp. 285–286, for which a family and species description is provided is treated by J.E. Laferrière who also presented the next family, the **Equisetaceae**, pp. 287–288. *Equisetum* in Malesia is represented by one subspecies only, *E. ramosissimum* subsp. *debile*. In the family **Matoniaceae**, pp. 289–294, two genera are distinguished with two species each. This family is restricted to Malesia. X.C. Zhang and H.P. Nooteboom presented the **Plagiogyriaceae**, pp. 295–316, a monogeneric family with 11 species of which seven occur in Malesia.

Several of the families are pre-empted by short but adequate notes on one or more aspects such as distribution, habitat and ecology, fossils, taxonomy and chromosomes. In the Polypodiaceae the morphology and anatomy of the rhizome, rhizome indument, fronds, lamina indument, venation, sori, sporangia and spores (by G.A. van Uffelen), all characters of importance from a diagnostic point of view are briefly discussed. The list of references provided for each family I find invaluable. The list, arranged alphabetically by author, provides the reader with a concise directory to modern literature on aspects ranging from ecology to monographs.

The genera within each family are arranged in an alphabetical sequence rather than a phylogenetic one. Perhaps this is to be understood as no satisfactory classification has as yet been proposed for many of these families and for the sake of consistency they are arranged alphabetically. Only in the Davalliaceae do we see the subdivision of the genus into two subgenera. Also in the generic treatments the species are arranged alphabetically.

We now have become accustomed to the thorough taxonomy provided for each family, genus and species in this series. Although the taxonomy is exclusively based on Malesia the list of references and synonyms in many events are most impressive. Details on the types, lacking in many floras, are provided for both the currently accepted name and for the synonyms. The descriptions are very detailed and mostly complete except where inadequate material was available for study. For each species the complete distribution and notes on the habitat and ecology are provided. This is often supplemented by interesting notes on the taxon and often its use by the locals. The volume concludes with an index to the scientific names with the intraspecific names having been entered under the specific name to which they belong, preceded by the indication of their rank.

The detailed line drawings by Mr. J.H. van Os and Mr. J.J.A.M. Wessendorp that supplement this volume are outstanding. Nineteen of these drawings are full-page whilst 16 are half-page or larger. Also supplementing the text are seven full-page photographs of herbarium sheets depicting species of *Davallodes*, *Leucostegia* and *Plagiogyria*.

A single new combination, *Aglaomorpha acuminata* (Willd.) Hovenkamp (- *Acrostichum acuminatum* Willd.) is proposed in this volume.

This 'new look' volume differs from the already published volumes in several points. The cover is full-colour and depict a (somewhat blurred) frond of *Davallia trichomanoides*. This volume is 5 mm narrower than those already published and the paper is of better quality. The text run across the page rather than the two column format of the previous volumes. Also the print of the species descriptions is larger. I feel that volume three is an improvement on the previous volumes of this series.

Although numerous species in this volume are restricted to the rich Malesian flora the distribution of many taxa extends beyond this geographical region. The result is that this flora has a much wider appeal than just the Malesian region. Not only this volume but the entire series is a must for everyone interested in pteridology.

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Fungi of Australia

Volume 1A: Introduction, Classification
Volume 1B: Introduction, Fungi in the Environment
Volume 2A: Catalogue and Bibliography of Australian Macrofungi: 1. Basidiomycota spp.

Published jointly by the Australian Biological Resources Study and the Commonwealth Scientific and Industrial Research Organization.

These three volumes constitute the introductory volumes of a major work, which will eventually comprise 60 volumes of information on the Fungi of Australia. The first volume, 1A, is dedicated to Dr P.H.B Talbot, a South African-born mycologist, who emigrated with his family to Australia in 1960, to take up a post as Senior Lecturer at the Waite Agricultural Research Institute of the University of Adelaide. He died on 7 August 1979.

Volume 1A contains a brief history of mycology with special reference to the development of classification from before Micheli to the present time in which fungi are placed in three kingdoms viz. Protoctista. Chromista and Eumycota. This is followed by keys to the Orders of fungi and an extensive bibliography. This, in turn, is followed by the history of the taxonomic study of the Australian fungi, biology of fungi, Biogeography of

fungi and fossil fungi from Australasia. Each chapter has an extensive list of references.

Volume 1B contains thirteen accounts of fungi in diverse environments such as fresh water, plant parasites, herbivore gut inhabiting fungi's, mycotoxin producing fungi and fungi as a source of food for mammals.

Volume 2A, dedicated to the Australian Mycologist Dr John Walker, is devoted mainly to a catalogue and bibliography of Australian Macrofungi mainly Basidiomycota; a section on miscellaneous Aphyllophozales, and another section on Extra Australian species associated with *Eucalyptus*. An extensive list of references follows.

All three volumes are strongly bound in pale green covers with the title in white letters and an attractive painting of some fungi. The Orders of Australian fungi are printed inside the front cover and facing page together with the volume numbers in which they will appear. Other information such as the names of the Executive Editor, Volume Editor and Editonal Assistants appear on the next page followed by the Contents, names of contributors, illustrators, Editorial Committee and the Introduction setting the series, Editorial Conventions, Content and Format and Acknowledgements.

The publication of the 'Fungi of Australia', must be hailed as a major contribution to Mycology from a relatively small and 'young' continent. Major advances in Mycology have been made over the past 50 years and bearing in mind that large parts of Australia are dry and very sparsely inhabited, the production of a work of this magnitude must be seen as a major contribution. The science of Mycology originated in Europe with its relatively cool wet climate where fungi may be encountered throughout the summer. With its dry climate and long distances between centers, a comprehensive study of Australian fungi must have required considerable effort and perseverance.

The fungi occurring on the continents South of the Equator have received relatively little attention. That the species that occur in these areas are diverse and as fascinating as those better known from north of the Equator is becoming more evident with studies by local and visiting mycologists fiom the Northern Hemisphere. This is the type of information that will appear in the future volumes of Fungi of Australia. That many species of fungi found in Australia are also found to occur in Africa south of the Equator and in South America is self-evident. The appearance of these volumes from Australia must, therefore, be greeted with enthusiasm. They can only promote the knowledge of fungi of the Southern Hemisphere and should be valuable additions for reference on the shelves of every library of those institutions where fungi are being studied. Their contents are clearly presented and most readable.

The price of $A 69.95 per volume for hard cover and $A 54.95 for soft cover may be high for South African individuals but they will be a source of valuable information for many years in the future.

G.C.A. Van Der Westhuizen